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BE SMART BE SAFE

Introduction

This handbook has been designed to help you prepare your family and your home for the potentially devastating effects of a hurricane.

By ***planning*** ahead you can minimize the dangers of these storms. By ***planning*** now you also reduce the discomforts of recovery and the time required to return your life to normal.

Pleas read this guide thoroughly and discuss it with your family - you should develop your ***family plan*** together. Write your plan on the pages provided and keep your handbook readily available during the *hurricane season: June 1 through November 30*.

Beaufort County Emergency Management Department
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internet: www.bcgov.net/Emerg_mgt/emer_mgt.htm

Weather Terms And Definitions

Severe Thunderstorm -
A thunderstorm accompanied by wind gusts in excess of 58 mph/93 kph and/or hail ¾ inch or larger.

Tornado –
A violent, rotating funnel-shaped mass of air, which usually extends downward from a thunderstorm.

Funnel Cloud –
A tornado that is not touching the ground

Waterspout –
A tornado over water.

Tropical Storm –
A tropical cyclone with wind forces from 38-73 mph/61-117 kph.

Hurricane –
A severe tropical cyclone with wind forces of 74 mph/119 kph or greater. (Though a hurricane averages 300 miles in diameter, the most severe weather is normally contained in the area immediately around the eye. Weather conditions gradually decrease outward from there.)

Facts About Hurricanes

The term “hurricane” originated from Spanish and Caribbean Indians who used the word as reference for big winds they believed to be caused by evil spirits. Commonly referred to as “the greatest storm on earth,” hurricanes are like no other storm ever seen or experienced on this planet.

A hurricane is a type of tropical cyclone, which is the general term for all circulating weather systems originating in tropical and subtropical waters, around a relatively calm center called the eye, as illustrated to the right. The tighter the eye, the more intense the storm.

Hurricane Hugo was the most severe storm to strike South Carolina in the past several years:

This classic Cape Verde hurricane was first detected as a tropical wave emerging from the coast of Africa on September 9, 1989. Moving steadily westward, the system became a tropical depression the next day, a tropical storm on the 11th, and a hurricane on the 13th. Hugo turned west-northwest on September 15 as it became a Category 5 hurricane. It was still a Category 4 hurricane when the center moved through the Leeward Islands and St. Croix, USVI, and the 18th. Turning northwestward, the center passed across the eastern end of Puerto Rico on September 19. This general motion would continue with some acceleration until Hugo made landfall just north of Charleston, South Carolina on 22 September. Strengthening in the last twelve hours before landfall made Hugo a Category 4 hurricane at the coast.

After landfall, the storm gradually recurved northeastward, becoming extratropical over southeastern Canada on September 23.

The Naval Air Station at Roosevelt Roads, PR reported sustained winds of 104 mph with gusts to 120 mph, which were the highest winds reported from the Caribbean. A ship moored in the Sampit River in South Carolina measured sustained winds of 120 mph. High winds associated with Hugo extended far inland, with Shaw Air Force Base, South Carolina reporting 67 mph sustained winds with gusts to 110 mph and Charlotte, North Carolina reporting 69 mph sustained winds and gusts to 99 mph. Storm surge from Hugo inundated the South Carolina Coast from Charleston to Myrtle Beach, with maximum storm tides of 20 ft observed in the Cape Romain-Bulls Bay area.

Hugo was responsible for 21 deaths in the mainland United States, five more in Puerto Rico and the U. S. Virgin Islands, and 24 more elsewhere in the Caribbean. Damage estimates are $7 billion in the mainland United States and $1 billion in Puerto Rico and the U.S. Virgin Islands.

PLEASE BE PREPARED!

The Birth of a Tropical Cyclone

Tropical cyclones form over warm waters from pre-existing disturbances. These disturbances typically emerge every three or four days from the coast of Africa as “tropical waves” that consist of areas of unsettled weather. Tropical cyclones can also form from the trailing ends of cold fronts and occasionally from upper-level lows.

The process by which a tropical cyclone forms and subsequently strengthens into a hurricane depends on at least three conditions:

A pre-existing disturbance with thunderstorms
Warm (at least 80ºF) ocean temperatures to a depth of about 150 feet
Light upper level winds that do not change much in direction and speed throughout the depth of the atmosphere (low wind shear)

Hurricane Structure

The main parts of a hurricane are the rainbands on its outer edges, the eye, and the eyewall. Air spirals in toward the center in a counter-clockwise pattern, and out the top in the opposite direction. In the very center of the storm, air sinks, forming the cloud-free eye.

Thunderstorm And Tornado Warnings

- **Thunderstorm Condition I.** An imminent thunderstorm is expected to pass or form within five nautical miles of MCAS Beaufort in less than one hour.

- **Thunderstorm Condition II.** An imminent thunderstorm is expected to pass or form within 60 nautical miles of MCAS Beaufort within three hours.

- **Tornado Condition I.** An imminent tornado is expected to pass or form within five nautical miles of MCAS Beaufort in less than one hour.

- **Tornado Condition II.** An imminent tornado has been observed or is expected to pass or form within 60 nautical miles of MCAS Beaufort within three hours.

Other Hazards

Rain: Hurricanes and tropical storms often bring very heavy rains for extended periods. From 6 to 20 inches of rain can fall in 24 hours or less producing flooding in many areas.

Tornadoes: As they move on shore, hurricanes can spawn numerous tornadoes. These tornadoes can occur without warning and add to the destructive potential of the hurricane.

Hurricane Force Categories

Once a tropical cyclone reaches hurricane strength (winds of 74 mph), it is placed into one of five categories to reflect wind speed and associated storm surge. The National Hurricane Center and the National Weather Service use the Saffhir-Simpson Scale for the categorization of hurricanes. The five different categories are listed below:

- **Category 1** - This is the least destructive hurricane, with winds of 74-95 mph/64-82 knots and an accompanying storm surge of 4-5 feet above the normal water level. The damage caused by this category of storm is estimated to be minimal.

- **Category 2** - Winds of 96-110 mph/83-95 knots and an accompanying storm surge of 6-8 feet above the normal water level. The damage caused by this category of storm is estimated to be moderate.

- **Category 3** - Winds of 111-130 mph/96-113 knots and an accompanying storm surge of 9-12 feet above the normal water level. The damage caused by this category of storm is estimated to be extensive.

- **Category 4** - Winds of 131-155 mph/114-135 knots and an accompanying storm surge of 13-18 feet above the normal water level. The dame caused by this category storm is estimated to be extreme.

- **Category 5** - Winds above 155 mph/135 knots and an accompanying storm surge greater than 18 feet above the normal water level. The damage caused by this category of storm is estimated to be catastrophic.

Conditions of Readiness

The following conditions of readiness are used for both hurricanes and Tropical Storms (which have reached destructive winds of 58 mph/50 knots).

➢ **Condition Five.** Seasonal condition form 01 June to 30 November. All hands conduct review of readiness posture and training.

➢ **Condition Four.** Destructive winds are possible within seventy-two hours. A general state of readiness will be assumed.

➢ **Condition Three.** Destructive winds are possible within forty-eight hours. The majority of preparation for the storm should be accomplished during this phase.

➢ **Condition Two.** Destructive winds are anticipated within twenty-four hours.

➢ **Condition One.** Destructive winds are anticipated within twelve hours.

☺ **All clear.** Destructive winds have passed the area. Serious hazards may be present; downed power lines, uprooted trees, polluted water, high water, and obstacles blown out of place. Exercise caution.

 Tropical Cyclone Condition 4

A hurricane **may** *affect* our area in 72 hours. Now is the time to:

- Check your hurricane supplies/***survival kit***.
- If you are in a mobile home or an RV, prepare to evacuate!

 Tropical Cyclone Condition 3

A hurricane **may** *affect* our area in 48 hours. Now is the time to:

- Contact family members to coordinate efforts.
- Turn refrigerator/freezer to coldest settings.
- Begin installing shutters or pre-cut plywood.
- Pool owners: Don't drain your pool completely; drop the level by 1 or 2 feet. Place outdoor furniture and pool equipment into the pool. Turn off electricity to pool pump. Add extra chlorine to compensate for heavy rains.
- Fill your fuel tanks early: automobile, propane, etc.
- Place your valuables into waterproof containers or plastic bags.
- Freeze water in plastic jugs. Fill up emergency water containers NOW.
- Get extra cash.

Tropical Cyclone Condition 2

A hurricane **may** *affect* our area in 24 hours. Now is the time to:

- Sterilize bathtub, jugs, bottles, cooking utensils, and other containers. To do this, scrub thoroughly, sponge and swab with regular, unscented, liquid chlorine bleach, then rinse. Let the tub and other containers dry, and then fill with water.

- Keep 5-gallon buckets, with tight-fitting lids, for use as emergency toilets. Line each bucket with a heavy-duty plastic trash bag.

- Clear your yard of loose objects such a hoses, BBQ grills, lawn chairs, trash, etc. and secure them inside your house.

- Protect valuables and electrical equipment.
  - Move them away from window.
  - Cover them with plastic bags.
  - Place them in cabinets, large appliances, or closets.

- If the evacuation order applies to you:
  - Call friends/relatives and let them know your evacuation destination.
  - Secure all window and doors tightly.
  - Load your survival kit.
  - Turn off electricity, water, and gas.

Tropical Cyclone Condition 1

A hurricane **may** *affect* our area in 12 hours. Now is not the time to relax! At this point, you should be ready for the hurricane. Make sure that you have your candles and batteries ready in case you experience a loss of electrical power. Power companies often secure power before the storm arrives to reduce the impact of storm damage to the electrical grids. Doing so greatly increases the ability to restore power after the storm.

Destructive Weather Siren Signals

Steady siren for five minutes –
Warning: A severe thunderstorm is imminent or Hurricane Condition I has been set for the Air Station.

Wailing siren –
Warning: A tornado is imminent. Sounded until the threat has passed.

Steady siren for one minute –
All clear. The destructive weather threat has passed

Steady siren for one minute –
1200 on Wednesdays: System test.

Evacuation Planning

If the Tri-Command area is under hurricane conditions, evacuation will be required for all personnel residing in mobile home or recreation vehicles. This evacuation order may occur during Condition 3 (48 hours) for all hurricane categories.

Evacuation is normally intended for personnel residing low-lying areas, which are affected by storm surges. However, personnel seeking shelter due to wind hazards can normally remain in their current dwelling. Most houses are as safe as on-base or off-base shelters, and they are much more relaxing!

The main goal in evacuation is to first enter an interstate highway system which is less prone to traffic stoppage. The best route is to leave early to I-95 or Hwy 278. Since tens of thousands of evacuees will also be fleeing, the ability to find a hotel will be difficult. Plan ahead!

Evacuation instructions will vary depending upon:
1) The storm category
2) Projected time of landfall
3) Area of projected landfall

When a hurricane, regardless of category, is projected to make landfall within 60 miles of Beaufort, personnel should prepare to evacuate Beaufort County when encouraged to do so.

It is best for personnel who are evacuating to go inland a minimum of 120 miles, avoiding the coastline. It is important to you to know the projected direction and intensity of the storm to plan a route, which will avoid potential landfall areas.

Once the decision has been made to evacuate, you should follow the traffic directions given by law enforcement agencies. In general you should follow:

1) Going North or West: Take Hwy 21 through Gardens Corner to Point South. Enter I-95. Proceed North to I-26.

2) Going West to Aiken/Augusta: Take U.S. 21 to Hwy 170 (Going south from Wal-Mart). Follow Hwy 170 to Hwy 278. Go west to Aiken/Augusta.

3) Going South: Take Hwy 21 though Gardens Corners to Point South. Enter I-95. Proceed south or take U.S. 21 to Hwy 170 (Going south from Wal-Mart). Follow Hwy 170 to Hwy 278. Go west to I-95.

Avoid a total disaster by not waiting until the last minute to evacuate. If an evacuation order is issued to your specific area, get out immediately to avoid being trapped in traffic. Not only is this extremely frustrating, it is dangerous! Many cars overheat due to lack of adequate airflow caused by the slow creep of traffic.

On-Base Shelters

Currently, there are three designated shelters primarily intended for use by mobile home residents. These shelters are available after Condition II or lower has been set. Information on shelters will be passed over CH-8 (Hargray), Ch-7 (Comcast), and local Charleston and Savannah television and radio stations.

Evacuation shelter #1: Laurel Bay Youth Center
Evacuation shelter #2: MCAS Training Building
Evacuation shelter #3: MCAS Gymnasium

When notified to evacuate a mobile home, immediately gather personal belongings and move to one of the above shelters.

Adequate clothing shall be worn when reporting to the shelter. Evacuees must be prepared to follow the instructions of the shelter management personnel.

Evacuees should bring the following items to the shelter:
1) A minimum 72-hour supply of non-perishable food, to include food for babies or special diet requirements. Refrigeration will not be available.
2) A minimum 72-hour supply of clothing, to include diapers if needed.
3) Any prescription medication that is needed.
4) Other items to consider: flashlight, small battery-operated radio w/headset, toys, books, games, snacks, and pillows.

UNLAWFUL DRUGS, ALCOHOLIC BEVERAGES, AND <u>PETS</u> ARE PROHIBITED FROM BEING BROUGHT INTO THE SHELTERS.

Off-Base Shelters

The American Red Cross operates (4) four hurricane shelters in Beaufort County. Evacuees are reminded that pets are not allowed in the shelters because of health regulations. The shelters are:

• **Bluffton Elementary School** and **H.E. McCracken Middle School** are both located off Buckwalter Parkway in Bluffton in southern Beaufort County. One of these shelters will also serve as a special-needs shelter where nurses are available to provide limited care.

• **Battery Creek High School** located at 1 Blue Dolphin Drive near Beaufort in northern Beaufort County.

• **Beaufort Elementary School** located at 1800 Prince Street in Beaufort in northern Beaufort County. This shelter will also serve as a special-needs shelter where nurses are available to provide limited care.

• The above-mentioned shelters will open only for category one (74 to 95 mph) and category two (96 to 110 mph) hurricanes. For category 3 hurricanes or greater, citizens will be directed to shelters in Jasper and Hampton counties.

Barracks Evacuation Plan

The air station has five buses to accommodate requests for support from MAG-31, H&HS, CSSD-23, or MWSS-273. Each squadron or unit is responsible for attending to their members. Units will be responsible for destination arrangements and accountability of personnel requiring transportation. The Station (through the S-4) will make all buses available for evacuation.

Category 3 Shelter Plan

For category 3 hurricanes or greater, individuals in off-base *and* on-base shelters will be directed to shelters in Jasper and Hampton counties. These shelters are open for all categories of hurricanes. They are:

- **Jasper County High School**
- **Ridgeland Elementary and Middle School**
- **Wade Hampton High School**
- **Varnville Elementary School**
- **Estill High School**
- **Hampton Elementary School**

Special-Needs Shelters

The following special-needs shelters, along with those mentioned above, are available:

- **Jasper High School**
- **Wade Hampton High School**
- **Colleton Regional Medical Center in Walterboro**

Risk Assessment

No option is Totally Safe! However, evaluation of the available options will determine the **SAFEST** available option to us. The three options are:

- Voluntary Area Evacuation
- On Base Shelters
- Off Base Shelters

Voluntary Evacuation out of the Tri-Command Area is a good option if:

1) You evacuate early to avoid traffic jams

2) If your car is in very good condition

3) If you are going to stay with family or friends

Other Considerations

Family pets are not allowed in public shelters.

If you must leave your pet at home, prepare an area that is easily cleaned, such as a bathroom or utility room. Have something for your pet to climb up on in case of rising water. Do not leave the animal near a window. Leave several days' supply of dry food and water in non-spill containers.

Horses and livestock have a better chance for survival when turned out in clean pastures with native vegetation.

What To Do Before June 1

Planning is the key to success! With your family present, answer the following questions to see if you must evacuate.

- Is my house located in a flood zone or storm surge area? ☐Yes ☐No

- Is my home vulnerable to hurricane winds (mobile home, RV, and etc.)? ☐Yes ☐No

- If either of the above items is "Yes", describe your evacuation route (Note: Call a friend and stay with them). _____

_____

_____

- Are valuables and important papers copied and placed in a safe, waterproof place? ☐Yes ☐No
Location: _____

_____

- Write down all important names, addresses, phone numbers, account numbers, policy numbers, etc. of doctors, insurance agents (health, flood, auto, home), lawyers, family and friends. Most insurance companies cover only damage resulting from winds, not damage caused by floods (even though the storm caused the flood). Check with your insurance company!

_____

_____

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_____

_____

• Is a ***Safe Room*** identified? ☐ Yes ☐ No
Location: _____
_____

A ***safe room*** is a room that is best suited to protect you and your family from missile hazards and from the devastating effects of a tornado. The best location is an interior room on the first floor of the house. Researchers, emergency response personnel, and people cleaning up after tornadoes have often found an interior room of a house still standing when all other aboveground parts of the house have been destroyed. Closets, bathrooms, and small storage rooms normally offer the best protection due to having only one door and no windows. Bathrooms have the advantage of including a water supply and toilet.

☐ Containers for drinking water (5 gallons per person, minimum)

☐ Seal water containers tightly, label and date them when filled, and store in a cool, dark place

☐ Containers for sewage - 5-gallon buckets, with covers (at least 2)

☐ Heavy-duty trash bags

☐ Bleach (pure, unscented, liquid)

☐ Water purification tablets

☐ Nonperishable (canned or packaged) goods and beverages (at least a 3-day supply)

☐ Pet carrier(s), extra pet food and water

- ☐ Non-electric can opener
- ☐ Emergency/camping cooking equipment and fuel
- ☐ Fire extinguisher
- ☐ Portable cooler
- ☐ Matches or lighters
- ☐ Rope and Tarp
- ☐ Duct tape

Bring *only* the following items to a shelter:

- ☐ Baby food, diapers, and formula
- ☐ Extra prescription medicine (2-week supply)
- ☐ Battery-powered radio and extra batteries
- ☐ 2 flashlights and 2 extra packs of batteries
- ☐ List of important phone numbers
- ☐ Insurance policies/titles to real property
- ☐ Toiletries
- ☐ Special dietary needs
- ☐ Insect repellant
- ☐ First-aid kit
- ☐ Cash

Emergency Restroom Facilities

• A chemical port-a-john can be created:

1) Use a 5-gallon buckets lined with heavy-duty plastic garbage bags.

2) Add about ¼ cup of lime or regular, unscented, liquid chlorine beach to the bucket as a disinfectant and deodorizer. Keep lids on firmly.

3) Keep buckets in a cool, dark place.

4) DO NOT DISPOSE OF HUMAN WASTE THROUGH YOUR REGULAR TRASH PICKUP! Dispose of the waste by flushing it down your toilet as soon as sewer services are restored.

5) Clean and disinfect the bucket immediately.

• To use your toilet: Flush until the bowl has no water. Then, line with heavy-duty trash bags. Disinfect with chlorine bleach after each use. When full, tie the bags shut and remove to an outside location.

• If significant sewer outages have occurred, instructions for disposal of human wastes will be announced. Otherwise, when the system is operating again, dump the waste you've collected into our toilet and flush.

NO ELECTRICITY . . .

Don't plug portable generators into your home's electrical outlet! **This could injure or kill neighbors or electrical crews.** Place generators outdoors or in a well-ventilated area. Plug appliances directly into the generator.

If using a generator, conserve fuel by limiting appliance usage to the bare essentials.

HOW TO PREPARE SAFE DRINKING WATER

If you have exhausted your water supplies and have a well, you can follow some water purification procedures until water service is restored.

Contaminated water can contain microorganisms that cause disease. You should purify any water of which you're uncertain. There are many ways to purify water; but none are perfect. Often, the best solution is a combination of methods.

Before purifying, let any suspended particles settle to the bottom or strain them though layers of clean cloth.

The following are three purification methods, all of which kill microbes:

BOILING is the safest way to purify water. Bring water to a rolling boil for 10 minutes, keeping in mind that some water will evaporate. Of course, let cool before drinking. Boiled water

will taste better if you put oxygen back into it. Do this by pouring water back and forth between two clean containers. This also will improve the taste of stored water.

CHLORINATION uses pure, unscented, liquid chlorine bleach to kill microorganisms in water. Add two drops of bleach per quart of water (four drops if the water is cloudy), stir, and let stand for 30 minutes. If the water does not smell or taste of chlorine at that point, add another two drops and let stand for 15 minutes.

PURIFICATION TABLETS release chlorine and iodine into the water. They are inexpensive and are available at most sporting goods stores and some drug stores. Follow the package directions. Usually, one tablet is enough for one quart of water. For cloudy water, double the dose.

CONSUMER PROTECTION TIPS

Home repairs after a disaster may be the most stressful time for a consumer. The following tips will assist you in identifying unlicensed contractors and con artists:

• Be extremely cautious of anyone coming to your home uninvited and offering to do home repairs. Call phone number on business card.

• Don't be pressured into making a quick decision. Ask for references and get a second and third opinion.

• Don't be pressured! Don't pay balance until work is completed!

 After The Storm

• Leave your **safe room** slowly and carefully. Inspect damage inside your house only.

• Protect your belongings from further damage.

• Call 9-1-1 to report life-threatening emergencies only – not damages or power outages.

• Wait for the *all-clear* signal from local authorities before you go outside, drive, or return home. Emergency vehicles have priority use of roadways.

• Avoid opening your refrigerator or freezer. This will allow your food to remain cool for a longer period of time.

When venturing outside, avoid downed or dangling utility wires. Be especially careful when cutting or clearing fallen trees or walking through water puddles. They may have power lines tangled or laying in them.

• Report property damage to your insurance agent immediately. Your agent should provide you with claim forms and arrange for an insurance adjuster to visit your property and assess the damage.

• Make emergency repairs and document them. **Keep all receipts and take photographs of the damages, before and after emergency repairs, to submit with your claim.**

• Take precautions if the damages require you to leave your home. Secure your property. Remove valuable items. Lock windows and doors. Contact your insurance agent and leave a phone number where you can be reached.

Destructive Weather Information Hotline
(800) 343-0639

It is the responsibility of the service member to ensure that their chain of command is aware of their evacuation plans. Check in daily for updates.

MCAS Beaufort Weather
https://www.beaufort.usmc.mil/weather/beaufort_weather.htm

Beaufort County Emergency Management Department
http://www.co.beaufort.sc.us/Emerg_mgt/emer_mgt.htm
(843) 470-3054

South Carolina Interactive Weather Information Network
http://iwin.nws.noaa.gov/iwin/sc/sc.html

Naval Oceanographic Office
https://www.navo.navy.mil/

U.S. Naval Observatory
http://tycho.usno.navy.mil/

Federal Emergency Management Agency
http://www.fema.gov/
(770) 220-5200

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